

## SANDHANA KALPANA: A LITERARY REVIEW

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(Raj.)**ABSTRACT**

*Sandhana Kalpana* is described in the *Charaka Samhita*, *Sushruta Samhita*, and other classical texts from that time period. *Sandhan Kalpana* is classified into two types: *Madya vargiya Sandhan* (Alcoholic Fermentation) and *Amla vargiya Sandhan* (Acidic Fermentation). *Madya vargiya Sandhan Kalpana* is made up of *Asava*, *Arishta*, *Seedhu*, *Sura*, *Maireya*, *Madhvasav*, *Madya*, and *Varuni*. *Shukta*, *Chukra*, *Tooshodak*, *Souveerak*, *Dhanyamla-Kanji-Arnaal* and *Sandaki* comprise *Amla vargiya Sandhan*. *Sandhan Kalpana's* clinical practise, however, is now limited to the use of *AsavaArishta*. In this article, we will thoroughly review all *Sandhan Kalpana* to identify the difficulties and shortcomings in the manufacturing process of formulations other than *Asava Arishtas*, as well as solutions to

overcome those difficulties and shortcomings, allowing them to be accommodated in daily clinical practise wherever applicable.

**KEYWORDS:** Asava, Arishta, Sandhana, Madya, Amla.**INTRODUCTION**

The availability of fast-acting and assimilation of alcohol probably laid the foundation for the development of *Sandhan Kalpana* by our *Acharya*. *Acharya Sharangdhar* states that *Asava-arishta* contains trace amounts of alcohol and therefore functions as a drug.<sup>[1]</sup> '*Sandhana kalpana*' is a one-of-a-kind method of preparing acidic and alcoholic fermented formulations. Liquid basic drugs (juices or decoctions) are preserved for fermentation in order to manufacture these medicines, as shown in classic texts. In this process, self-generated ethyl

alcohol (in these dosage forms) is produced from the raw materials used in the pharmaceutical process and is not added externally. Ethyl alcohol is not the only product produced, it is a component of many other organic compounds. In addition, alcohol / acetic acid (depending on the intended indication) is prescribed to extract the active ingredient of the herbal medicine.<sup>[2]</sup> Due to these properties, these formulations possess the active components of other herbal ingredients with them, leads to faster effect than many other formulations. These formulations are known as *Shuktachukradi Amla Vargiya Sandhan Kalpana* when they become sour. In order to facilitate the use of these less popular but effective formulations, it is necessary to understand the manufacturing process and process difficulties and find solutions to them.

## MATERIALS AND METHODS

### Preparation Method

Many preparations were mentioned in the classical texts, but the preparation method was first emphasized in *Sharangdhar Samhita*. A base liquid (perhaps water, expressed juice, or a decoction) is put in a container, a fermenting agent (*Dhatki pushpa* or *Kinva*, i.e. sediments containing mould or yeast, etc.), sweetening agents (jaggery, honey, etc.) is added, and the mixture is packed for a particular timeframe (15-30 days or till the signs of completion are seen). The end result is a fermented alcoholic/acidic liquid.<sup>[3]</sup> *Acharya Sharangdhar* mentioned certain specifications to be followed in places where the quantity of the liquid, the quantity of the fermenting agent, and so on is not specified. 10 litres of liquid, 4 kilogrammes of jaggery, 2 kilogrammes of honey, and 1 kilogramme of the *Prakshep Dravya* should be combined.<sup>[4]</sup>

However, many difficulties in the process may have been encountered, which *Yadavji Trikamji Acharya* listed to adapt a layer of *Mansi*, *Marich*, and *Loha (Bhasma)* to the container or carry out the *Dhoopan* process of the container to clean it properly. This was most likely done to prevent fungi and other organisms from growing in the water used to clean the container. When the fermented liquid has carried the *jaata-rasa* (confirmatory test), it is filtered through a clean cloth and preserved.<sup>[5]</sup> These guidelines assisted in resolving flaws in the process of making *Asav Arishtas*, but difficulties in the process of other *Kalpas* persisted.

**Madya Vargiya Sandhan Kalpana<sup>[6]</sup> (Alcoholic Preparations)**

- ✚ **Asava-** A cold infusion, expressed juice, or plain water is put in an earthen vessel with jaggery, honey, sugar, and other herbal ingredients along with fermenting agents; the container is sealed tight and preserved still in a neutral environment. When it's finished, filter it and store it in glass containers. This is known as '*Asava*'.<sup>[7]</sup> It improves mental and physical strength, serves as an appetiser, alleviates insomnia, enhances taste, and promotes happiness. It also has the properties of the herbal ingredients that were added to it during fermentation (raw or liquid form).<sup>[8]</sup>
- ✚ **Arishta-** Instead of cold infusion, etc., herbal decoction is used, and the same process is followed. Because of the various *Samskaras* involved, *Arishta* is stronger than *Asava*. It can be used as an appetiser, *kapha-vaat naashak*, *pittarodhak*, mild laxative, and so on. It is also beneficial for *shosha*, *arsha*, *grahani*, *paandu*, and *jwara*. *Adhmaan*, *Udara rog*, *Ajeerna*, and *Shool* are also examples.<sup>[9]</sup> It is easier to digest than *Asava* and contains the properties of the herbal ingredients that were used in its preparation.
- ✚ **Seedhu-** When fermented with cooked sugarcane juice and other sweet liquids, it is known as *pakva rasa seedhu*; when fermented with uncooked sugarcane juice and other sweet liquids, it is known as *sheetrasa seedhu*.<sup>[10]</sup> However, the proportion in which the sugarcane juice should be cooked is not specified in the classical texts and must be researched ahead of time. *Pakva rasa seedhu* improves a person's voice, strength, and skin tone. It is a laxative and *vaat-piitakar*. It can be used to treat *medo roga*, *shopha*, *arsha*, *udar rog*, *snehaj vikaras*, and other *kaphaj vyadhees*. *Sheetarasa seedhu*, on the other hand, has fewer properties but is very good in *lekhan karma*.<sup>[11]</sup>
- ✚ **Sura-** Barley, wheat, and rice are cooked and then fermented in the same way. *Sura* is obtained after the filtered liquid has been distilled.<sup>[12]</sup> The amount of wheat, barley, or rice used in the method is not specified in the classical texts. It can help with *kasa*, *arsha*, *grahani*, and *mutraghat*. It is also known as *vaatnaashak*. It can help with lactation, physical strength, blood and appetite.<sup>[13]</sup> It also tends to raise *meda* and *kapha* levels in the body. It can help with *shotha*, *gulma*, and *mutrakrauchha*.<sup>[14]</sup>
- ✚ **Prasanna-** *Prasanna* is the clear liquid that forms in the upper layer of *Sura*.<sup>[15]</sup> This layer should most likely be obtained by gently pouring it out of the vessel after the sediments have settled. It is anti-emetic, *rochak* and relieves heartache and abdominal pain. It's *kapha-vaat naashak*. It is also beneficial in the treatment of *arsha* (haemorrhoids), *aanaha* (tensed abdomen), and *vibandha* (constipation).<sup>[16]</sup>

- ✚ **Kadambari**- This liquid is denser than *prasanna*.<sup>[17]</sup> Because no other specific property is mentioned in the classics, it is lost in transition.
- ✚ **Jagala**- The dense area below *Kadambari* is known as '*Jagal*'.<sup>[18]</sup> It has a lower alcohol concentration. This is most likely the filtrate that remained with the sediments. It is *Graahi* (holds), *ushna* (warm), *paktaa* (aids digestion), and *ruksha* (dry). It satisfies thirst, raises *kapha*, lowers *vaata*, and has *Hridya* properties. It is beneficial in the treatment of *pravaahika* (loose sticky stools), *aatop* (abdominal distension), *arsha*, and *kshay* (cachexial state).<sup>[19]</sup>
- ✚ **Medak**- This layer develops beneath *jagal*. It is denser than the one above it and contains a trace amount of alcohol. The properties are identical to those of *jagal*.<sup>[20]</sup>
- ✚ **Vakkas**- The lowest layer of the vessel is referred to as '*Vakkas*.' This layer contains no alcohol. This serves as a *Surabeej* (fermenting agent) in the following preparations.<sup>[21]</sup>
- ✚ **Maireyak**- When *Asava* and *Sura* are combined in equal parts and fermented. The resulting product is known as '*Maireyak*.' It's *teekshna* and *guru gunatmak*. It's *kashay-madhur rasatmak*. It lowers *vaata*. It is beneficial in *arsha*, *kaphaj rog*, *gulma*, *krumi*, and *medorog*, causing severe inebriation.<sup>[22]</sup>
- ✚ **Varuni**- The juice obtained from palm and date trees is collected in a vessel, where it ferments on its own in 2-3 days, and the resulting product is known as *varuni*.<sup>[23]</sup> It is obtained through the use of the '*Varuni Yantra*,' and thus is known as *Varuni*. It has the same properties as *Sura*. It can help with *peenas*, *aadhman* (distended abdomen), and *shool*.<sup>[24]</sup>
- ✚ **Kohal**- *Saktu* (Roasted wheat and Roasted rice) when fermented yields '*Kohal*'.<sup>[25]</sup> It is a combination of *tridoshkrut* and *bhedan guna yukta*, *avrushya*, and *mukhapriya*.<sup>[26]</sup>
- ✚ **Madya** - *Amla rasatmak*, *ruchikar*, *agnideepak*, *bhedak*, *kaphavaatahar*, *hrudya*, *bastivishodhana*, *laghu*, *vidahi*, *ushna*, *teekshna*, *indriya bodhan*, *vikasi*, and *srushta vinmutra kaarakam* are some of its properties. It is typically made with grapes and dates.<sup>[27]</sup>

#### Amla Vargiya Sandhan Kalpana (Acidic Formulations)

- ✚ **Shukta**- *Kanda*, *Moola*, *Phala*, etc. combined with *sneha*, *lavana*, *haridra*, *sarshap tail*, and other spices and then placed in a vessel containing water and sealed for a few days. The resulting product is known as '*Shukta*'.<sup>[28]</sup> It is *raktapittakara*, *chedan*, and digests all food, *vaiswarya*, enhances digestive power, *kapha*, *paandu*, *krumi nashak*, *laghu*,

*teekshna*, and *ushna*, *mootral*, *hrudya*, and *kapha-hara*, its *vipak* is *katu*, and it also improves taste.<sup>[29]</sup>

- ✚ **Chukra**- An alcoholic preparation that is kept beyond the time period of its fermentation loses its alcoholic properties and is kept for fermentation again to form an acidic preparation known as '*Chukra*'.<sup>[30]</sup>
- ✚ **Tushodak**- The coverings of white lentils are put in a container and the same quantity of barley is added, along with four times the amount of water, and boiled to half. This mixture is then placed in an earthen vessel and fermented in the same way that *kanji* is. This mixture has been filtered and is ready to use after 8 days. This filtered liquid is known as '*tushodak*.' It has *deepan* and *hrudya* properties. It's *paandu* and *krumi naashak*.<sup>[31]</sup>
- ✚ **Souveerak**- When the same process is repeated with plain barley (without the external covering), the end result is known as '*Souveerak*.' It's *bhedan guna yukta*. It can be used in *grahani* and *arsha*.<sup>[32]</sup>
- ✚ **Dhanyamla-Kanji-Arnaal**-Horse gramm and *Shaali Dhanya* (a specific type of rice) are cooked in four times water and filtered. The obtained liquid is kept for fermentation, and the sour liquid obtained as a result of this process is known as *Kanji*.<sup>[33]</sup> The time required for fermentation is not specified. However, it is suggested that you keep it until it turns sour. There is also one mention of fermenting it for seven days.<sup>[34]</sup> It has properties such as *laghu* and *jeevanam* (rejuvenating), *daaha naashak* (decrease burning sensation) when used externally. it reduces *vaata*, *kapha*, and *trishna* when used internally, *mukhavairasya* (improves taste), *daurgandhya* (diminishes mouth odour), and *mala naashak* (engulfs impurities), *shushkata & klam naashak* (tiredness) . It's *agnipradeepak* and it's used in *asthapana basti*.<sup>[35]</sup>
- ✚ **Sandaki** -*Sandaki* is made by combining reddish, mustard, turmeric, rock salt, asafoetida, black pepper, and cumin seeds in an earthen container with water. This mixture is then kept in a closed container at a neutral temperature for seven days. *Sandaki* is the liquid that results from filtering this mixture. It enhances taste, is difficult to digest, and vitiates *pitta* and *kapha*.<sup>[36]</sup>

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- ✓ There is no sound audible when putting one's ear to the vessel from outside.
- ✓ The *prakshep dravya* has all accumulated at the bottom of the vessel.
- ✓ When a burning matchstick is placed in the vessel, it continues to burn.

- ✓ The liquid achieves the desired smell, colour, and taste.
- ✓ A small sample taken in a glass test tube should be clear; if there are any particles present, the process is considered incomplete; the vessel should be sealed and allowed to complete the fermentation process.

## DISCUSSION

In this paper, an attempt has been made to review the method of preparation as well as the properties of the *sandhan kalpas*. This review shows that the procedure for making *asav-arishta* has been described in great detail in all classical texts, whereas the method of preparation of others like *varuni*, *sura*, and other *amla vargiya sandhan kalpas* has not been described in similar detail, such as the material of the vessel to be used, the amount of fermenting agent to be added, the temperature of the surroundings, and so on. The method of preparation of *kanji* may be used for *amla vargiya formulations*, and a thorough analytical study is required. The procedure described in the title *Anukta maan arishteshu* can also be used to prepare the *madya vargiya* formulations with certain *yukti* and *yojana*. The premises of the formulations mentioned can be used in everyday clinical practice, for example. *Sura* can be used in '*Stanya kshay*' in lactating mothers with low milk production, *Seedhu* can be used in people who speak a lot because of its *swarya* property, *Shukta* can be used in *krumi vikar*, *mutra vaha srotas* related *vyadhis*, and other *kaphaj vyadhees*. *Kanji* can be used in *vaata kaphaj vikaras*, as well as *mukhadaurgandhya*, *klam*, and some other. It can also be used to make *asthapan basti*. As a matter of fact, it was critical to go over the properties that were successfully accomplished in this paper.

## CONCLUSION

Possible solutions to the flaws were discussed. The properties discussed in this paper can be successfully applied to the use of these formulations in clinical practice. With proper focus, new horizons can be opened in the field of fast-acting medicines other than *Basmas* and other *Rasaushadhis*, and new therapies can be applied to the treatment of chronic diseases.

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